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8-23-89

REPLY TO: 6W-SE

MEMORANDUM

SUBJECT: Proposed Aquifer Exemption on the Osage Mineral Reserve

FROM: Richard C. Peckham
Geologist
Region 6

TO: Andrew B. Cherry
Attorney/Advisor
Underground Injection Control Branch (WH-550)

THRU: Gus Chavarria
Chief
Permits and Enforcement Section (6W-SE)

Attached is a revised copy of a draft of the Federal Register notice of the proposed rule for the exemption of the Happy Hollow and Z-Sand aquifers on the Osage Mineral Reserve. Also enclosed is the "Aquifer Exemption Summary Sheet" and map of the exempted area. Phillips Petroleum Company's original request for the exemptions is available if and when you need it.

Two questions you raised in your draft of the Federal Register notice were not addressed in our revised draft, but I wish to provide you an explanation here:

- 1) Are the exemptions to be for the entire fields affected? The exempted area includes parts of several fields and does not coincide with the field boundaries, therefore all references to fields have been deleted.
- 2) A discussion of the Vamoosa aquifer being excluded -- The Vamoosa aquifer is not being exempted. Phillips had originally included T 26N, R 6E - Section 24 in their request for the exemption of the Happy Hollow and Z-Sand. References to the Vamoosa in the fact sheet was to explain why we did not include Section 24 in our request for the aquifer exemptions.

If you have any questions, my number is FTS 285-7165.

Attachments

Don Olson 382-5558
Andrew Cherry - 382-5561

ENVIRONMENTAL PROTECTION AGENCY

40 CFR PART 147

[FRL]

Underground Injection Control Programs; Aquifer Exemption

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: EPA is proposing to designate a portion of the Happy Hollow and Z-Sand aquifers in western Osage County, Oklahoma as exempted aquifers in accordance with 40 Code of Federal Regulations (CFR) 147.2908. The aquifer exemptions would be limited to injection of water of a quality equal to or better than that contained in the proposed exempted aquifers. The proposed exemptions are being sought to allow the operator to maintain fluid levels below the base of the lowermost Underground Source of Drinking Water.

DATE: EPA will accept public comment on the proposed rule until (insert date 45 days from the date of publication in the FEDERAL REGISTER); a public hearing will be held on _____, at _____; requests to present oral testimony must be received on or before _____. EPA reserves the right to forego the hearing if sufficient public interest is not expressed.

FOR FURTHER INFORMATION CONTACT: Richard C. Peckham, Underground Injection Control Permits and Enforcement Section, (6W-SE), Environmental Protection Agency, Region 6, 1445 Ross Avenue, Suite 1200, Dallas, Texas, 75202, Telephone: (214) 655-7165.

SUPPLEMENTARY INFORMATION:

I. Introduction and background

The SDWA protects all underground sources of drinking water, whether or not specifically designated as such. The regulations define "underground sources of drinking water" (USDW) very broadly as: an aquifer which supplies or has sufficient capacity to supply a public water system; and either currently supplies drinking water for human consumption, or contains less than 10,000 mg/l total dissolved solids (TDS); and is not an exempted aquifer. Under existing regulations, EPA may exempt from the UIC program aquifers which have the capacity to supply public water systems and contain less than 10,000 mg/l TDS if they do not now and could not in the future serve as a source for a public water supply for one of the reasons recognized in the regulations (40 CFR 146.4, 147.2908). Owners and operators of injection wells may inject into an exempted aquifer.

II. Aquifer exemptions

EPA is proposing to designate a portion of the Happy Hollow and Z-Sand aquifers in western Osage County, Oklahoma as exempted aquifers in accordance with 40 CFR 147.2908. The aquifer exemptions would be limited to Class II injection of water of a quality equal to or better than that contained in the proposed exempted aquifers. There is currently no injection, and the operator does not intend to inject, into the proposed exempted aquifers. The proposed exemptions are being sought to allow the operator to maintain fluid levels below the base of the lowermost USDW.

*also may
add a few words
for clarification
KCS
9-19-89*

The Z-Sand is a locally named sandstone of the Buck Creek Formation of the Pennsylvania series. It ranges in thickness between 40 and 60 feet. The Happy Hollow is a limestone, also in the Buck Creek Formation. It is located approximately 100 feet above the Z-Sand and ranges in thickness between 10 and 30 feet. In the area petitioned, the two units occur at depths between 500 and 800 feet below the land surface. The confining layer between the shallow USDW's and the top of the Happy Hollow and/or Z-Sand ranges between 350 feet and 500 feet and contains 125 to 150 feet of cumulative shale.

The proposed area of the exemption is sparsely populated ranching country and all drinking water is obtained from a rural water system which obtains its water supply from another aquifer outside of the exempted area. A survey was conducted and no water supply wells which tap the Happy Hollow or Z-Sand aquifers are located within the proposed area.

Based on an evaluation of electric logs and actual water analyses, the operator has satisfactorily demonstrated that the two aquifers contain ground water with total dissolved solids of more than 3,000 mg/l and it is not reasonable to expect them to supply a public water system because of the good quality water available through the rural water system. The operator also submitted data comparing the costs of obtaining a water supply from the Happy Hollow or Z-Sand with that of the rural water system to substantiate that the aquifers are situated at a depth which makes recovery of water for drinking water purposes economically impractical.

These exemptions become effective 30 days after publication of the final rule in the Federal Register. Public comment is invited, particularly if information is available to show that any of the formations being exempted are currently serving as sources of drinking water, or if there is other current injection activity into USDWs where exemptions are not proposed.

III. Regulatory Impact

A. Executive Order 12291

Under Executive Order 12291, EPA must judge whether the proposed amendment to the regulations is major and therefore subject to the requirements of a Regulatory Impact Analysis. The proposed amendment does not impose any additional burden on the States or the regulated community. The proposed amendment does not have an annual effect on the economy of \$100 million or more, nor does it satisfy any of the other criteria listed in section 1(b) of the Executive Order. Therefore this proposed amendment does not constitute a major rulemaking. This proposal has been submitted to the Office of Management and Budget (OMB) for review as required by Executive Order 12291.

B. Paperwork Reduction Act

EPA has determined that the Paperwork Reduction Act, 44 U.S.C. 3501 et seq., does not apply to this proposed rule since no information collection or recordkeeping would be involved. This proposed rule would merely exempt specific portions of certain aquifers for the purposes of Class II injection in the Osage Mineral Reserve and any information collection or recordkeeping requirements have already been approved by OMB.

C. Regulatory Flexibility Analysis

Under the Regulatory Flexibility Act, 5 U.S.C. 601 et seq., an agency is required to prepare an initial regulatory flexibility analysis whenever it is required to publish general notice of any proposed rule, unless the head of the agency certifies that the rule, if promulgated, will not have a significant economic impact on a substantial number of small entities. This proposed amendment to the regulations requires no additional reporting or other burdens on the regulated community. Therefore, the Administrator certifies that this regulation will not have a significant impact on a substantial number of small entities.

Dated: _____

William K. Reilly

Administrator

Therefore, 40 CFR Part 147 is proposed to be amended as follows:

1. The authority citation for Part 147 would continue to read as follows:

AUTHORITY: 42 U.S.C. 300h; and 42 U.S.C. 6901 et seq.

2. Section 147.2908 is proposed to be amended by adding a new paragraph (c) to read as follows:

§ 147.2908 Aquifer Exemptions.

* * * * *

(c) In Accordance with subsections (a) and (b) of this section, those portions of aquifers described below are hereby exempted for the purpose of Class II injection activity. This exemption applies only to those portions of the Happy Hollow and Z-Sand aquifers defined on the surface by an outer boundary of those quarter sections tabulated below. The portions of the aquifers being exempted are located at a depth below land surface between 500 and 800 feet and the exemption is limited to injection of water of a quality equal to or better than that contained in the exempted aquifers.

Location

T 25, R 6E - NW/4, SW/4 Section 2
 T 25, R 6E - Section 3
 T 25, R 6E - Section 4
 T 25, R 6E - NE/4, SW/4, SE/4, Section 5
 - T 25, R 6E - SE/4, Section 6
 T 25, R 6E - Section 7
 T 25, R 6E - Section 8
 T 25, R 6E - Section 9
 T 25, R 6E - Section 10
 T 25, R 6E - NW/4 Section 15
 T 25, R 6E - Section 17

Location

T 26, R 6E - Section 1 *NE/4, NW/4, Section 9*
 T 26, R 6E - NE/4, NW/4, SE/4, Section ~~8~~ 10
 T 26, R 6E - Section 11
 T 26, R 6E - Section 12
 T 26, R 6E - Section 13
 T 26, R 6E - Section 14
 T 26, R 6E - NE/4, SE/4 Section 15
 T 26, R 6E - Section 22
 T 26, R 6E - Section 23
 T 26, R 6E - SW/4 Section 26
 T 26, R 6E - Section 27
 T 26, R 6E - NE/4, SE/4 Section 33
 T 26, R 6E - Section 34
 T 26, R 6E - NW/4, SW/4 Section 35
 T 27, R 6E - Section 36

*Also printed out
 error:
 RCP
 9-19-89*

AQUIFER EXEMPTION
SUMMARY SHEET

Date application received in Region: 6-7-89

Date application sent Headquarters: _____

Date action needed: ASAP

APPLICANT: Phillips Petroleum Company

HEARING DATE: _____

I.D. NUMBER: _____

EXEMPTION DESCRIPTION (Township, Range, Section, Quarter section
and affected area):

FIELD: Parts of T 25N - R 6E; T 26N - R 6E; and T 27N - R 6E (See Attached Map)

AQUIFER TO BE EXEMPTED: Happy Hollow and Z-Sand Aquifers

JUSTIFICATION FOR EXEMPTION:

(X) Aquifer is not a source of drinking water and will not serve
as a source of drinking water in the future because it:

(X) Has a TDS level above 3,000 and not reasonably expected
to serve as a source of drinking water

() Is producing or capable to produce hydrocarbons

() Is producing or capable to produce minerals

() Is too deep or too remote

() Is above Class III area subject to subsidence

() Is too contaminated (name contaminant(s)):

(X) Other: Recovery of water for drinking water purposes is economically
impractical.

PURPOSE OF INJECTION: The intent is not to inject into either of these
units; the exemption is being sought to allow the operator to maintain fluid
levels below the base of the lowermost USDW.

APPLICANT: Phillips Petroleum Company

HEARING DATE: _____

I.D. NUMBER: _____

INJECTED FLUID QUALITY: NA INJECTION FLUID SOURCE: NA

FORMATION WATER QUALITY: 3,000 - 10,000 PPM TDS

OIL OR MINERAL PRODUCTION HISTORY: None

ACTIVE INJECTION WELLS INJECTING INTO SAME FORMATION

<u>Field</u>	<u>Location</u>	<u>Injection Interval</u>	<u>Injection Source</u>	<u>Total Depth</u>
NONE				

WATER USE IN AREA: Confined to shallow wells of 100 feet or less; there
is no ground water used from the Happy Hollow Limestone or Z-Sand within
the requested aquifer exemption area. All drinking water in the area is obtained
from a rural water system which obtains its water supply from another aquifer
outside of the exempted area.

REMARKS: _____

